SIEMENS

SONOCUR

SP

Replacement of Parts

Replacement of cooling pump for SONOCUR and LITHOSTAR MODULARIS

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NOTICE **The information contained in this document pertains to the SONOCUR and LITHOSTAR MODULARIS.**

Safety information

Adhere to the safety information provided with this product.

Tools

- Standard service tools
- A PLLC extracter is required when the SONOCUR is used with cooling unit 47 78 002 J1050.

Important information

Contents

This kit contains the necessary parts for any configuration. Not all parts may therefore be needed.

Contents of kit:	Application		
	SONOCUR		LITHOSTAR MODULARIS
	cooling unit: round water tank (Chapter 2; Fig.1)	cooling unit: rectangular water tank (Chapter 2; Fig.8)	cooling unit: rectangular water tank (Chapter 3; Fig.1)
pumps	X	X	X
support	X	X	X
2 hoses	X	X	X
mounting material	X	X	X
PROMS		X	
instructions	X	X	X

Delivery logistics

IWAKI pump item number: 70 41 101 J1050

Defective part	Application	Order/Delivery
Hose pump head D=6,35(47 73 839 J1050)	Cooling pump head SONOCUR LITHOSTAR MODULARIS	A new pump is delivered automatically. (70 41 101 J1050)
Hose pump SR10/100 (47 73 854 J1050) Note: This is the drive motor for hose pump D=6,35 (47 73 839 J1050)	Drive motor SONOCUR LITHOSTAR MODULARIS	The new pump **must** be ordered.(70 41 101 J1050) Why: This motor is also used for the coupling hose pump.
Hose pump (47 73 391 J1050)	Cooling pump head SONOCUR	The new pump **must** be ordered.(70 41 101 J1050) Why: This hose pump is also used for the coupling.
Entire hose pump (47 73 409 J1050)	Entire cooling pump SONOCUR	The new pump **must** be ordered.(70 41 101 J1050) Why: This unit is also used for the coupling.

What happens with the removed parts

Hose pump head	Discard
Motor	If it is ok, it can be used for the coupling circuit.

Spare parts for the new pump (IWAKI)

- If a spare part is needed for the new pump (IWAKI), this Upgrade kit (item number: 70 41 101 J1050) is also delivered.
  Only the pump needs to be replaced. All other parts are not required.

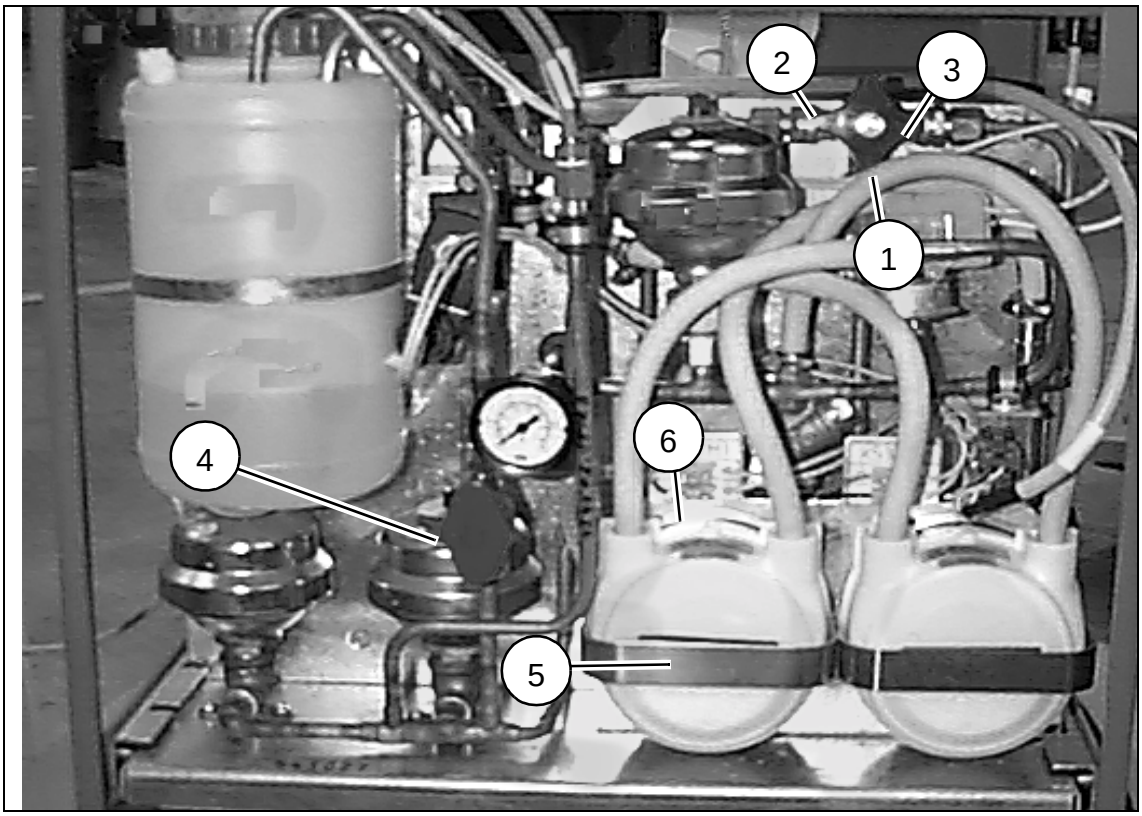

Fig. 1

Water system (round water tank)

Emptying the cooling circuit

NOTICE

When opening the water system, avoid direct contact with the water since it may be contaminated.

Any contact areas should be thoroughly rinsed with clean, running water.

- Switch the system off.
- Open the system covers.
- Drain the water storage tank.
- Set the two arrows on three-way valve Y9 in positions 1 and 2 (Fig. 1).
- Open two-way valve Y8 (4/Fig. 1).
- Set the service switch on M13/D3/S2 to position 2 (Service on).
- Switch the system on.
- Press the “menu” key in the "MAIN MENU” on the control panel (the next menu “STANDARD” is displayed).

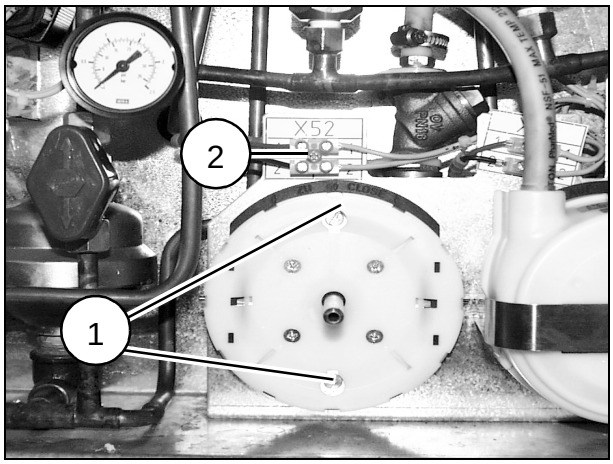

Fig. 2

- Press the "Next" key in the “STANDARD” menu once (the next menu “EXTRAS” is displayed).
- Press the “Next” key in the "EXTRAS” menu once (the next menu “SERVICEINFO” is displayed).
- Press the "Next” key (the next menu “TOOLS” is displayed).
- Select “Refill cooling unit”.

NOTICE

You can now control the cooling pump by pressing the + / − keys on the control panel.

- Activate the − key on the control panel until there is no more water in the cooling circuit.
- Set the two arrows on three-way valve Y9 to positions 1 and 3 (Fig. 1).
- Close the two-way valve Y8.
- Set the service switch on M13/D3/S2 to position 1 (Service off).

Removing the hose pump head and motor

- Remove the safety bracket (5/Fig. 1) on the hose pump head.
- Press the black locking mechanism on the hose pump (6/Fig. 1) up or down and disconnect the hose pump head from the drive.
- Open the two hose clamps and pull off the hoses.
- Remove the hose pump head.
- Remove the motor by removing both screws (1/Fig. 2).
- Switch off the voltage supply (2/Fig. 2) for the motor.
- Remove the motor.

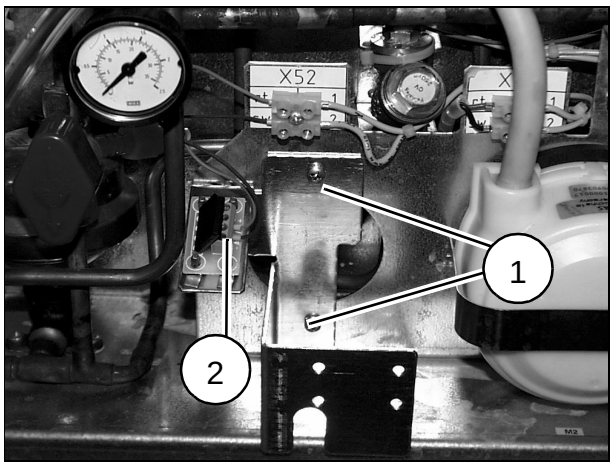

Fig. 3

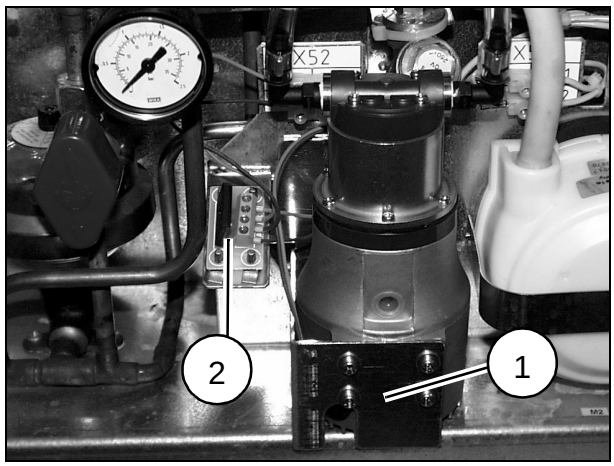

Fig. 4

Installation of new pump (IWAKI)

- Attach the positioning bracket with the two long screws (1/Fig. 3).
- Attach the two cables from the rectifier (2/Fig. 3) to connection X52.
  - "+" rectifier to "rt or 1" connection X52
  - "-" rectifier to "sw or 2" connection X52
- Use four screws (1/Fig. 4) to attach the new pump into place.
- Attach the cables from the pump to the rectifier (2/Fig. 4).
  - "red cable" motor to "+" rectifier.
  - "blackcable" motor to "-" rectifier.
- Attach the two new hoses :
  - connect the black labelled hose to the connection (4/Fig. 7).
  - remove the black adapter (tube) from the other hose (will not be used) and attach it to the connection (3/Fig. 7).
- Connect the quick couplings of the pump and the hoses. The right side of the pump (labelled black) must be connected to the black labelled hose.

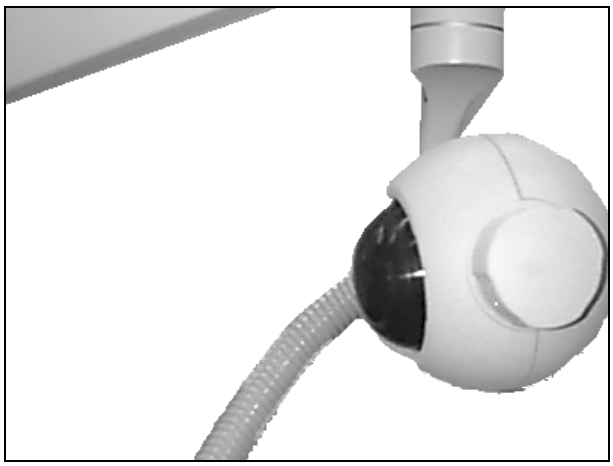

Fig. 5

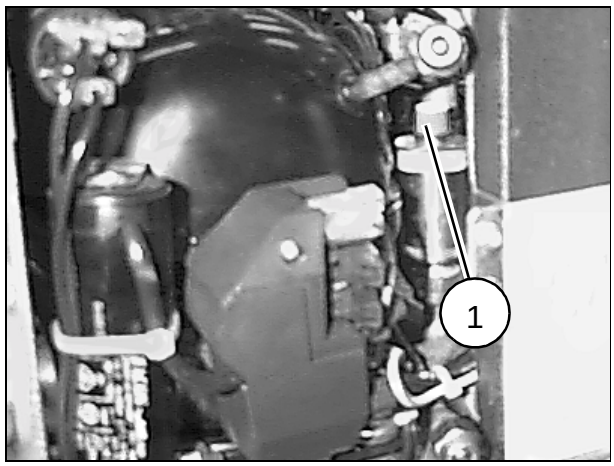

Fig. 6

Filling the cooling circuit

- Fill the water storage tank halfway with water.
- Move the sound wave head into the irrigation position for the cooling circuit (Fig. 5).
- Open the vent valve in the cooling unit (1/Fig. 6).
- Set the two arrows on three-way valve Y9 to positions 1 and 2 (Fig. 1).
- Open two-way valve Y8 (4/Fig. 1).
  (Y8 horizontal = closed / Y8 vertical = open).
- Switch the system on.
- Set the service switch on M13/D3/S2 to position 2 (Service on).
- Press the "Menu" key in the “MAIN MENU” on the control console (the next menu “STANDARD” is displayed).
- Press the “Next” key in the "STANDARD” menu once (the next menu “EXTRAS” is displayed).
- Press the “Next” key in the “EXTRAS” menu once (the next menu “SERVICEINFO” is displayed).
- Press the “Next” key (the next menu “TOOLS” is displayed).
- Select “Refill cooling unit”.

NOTICE	**You can now control the cooling pump by pressing the [+] / [−] keys on the control panel.**

- Activate the [+] key on the control panel until the water running from the return hose into the water storage tank is free of air bubbles.

NOTICE	**As long as the [+] key is held down, hose pump M1 will run and the cooling circuit will fill.**

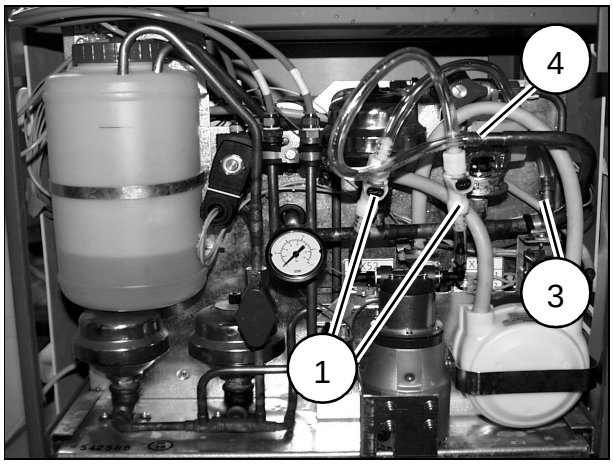

Fig. 7

- Continue activating the [+] key on the control panel for approximately 5 minutes after filling is completed while moving the sound wave head and the corrugated tubing until there are no more air bubbles in the cooling circuit.
- Close two-way valve Y8.
  (Y8 horizontal = closed / Y8 vertical = open).
- Press the button [+] if an overpressure of 600 mbar (shown on the manometer) has built up in the cooling circuit. Close valve V9 (i.e. set the two markings (arrow) to position 1 and 3 (Fig. 1)).
- Leave the system switched on for 15 minutes make sure there is no pressure loss.
  In case of a pressure loss, repeat the pressure setting and also check the hose connections.
- Press the button [+] on the control panel for 2 minutes to permit any bubbles which may be present to escape.
- Close the vent valve in the cooling unit (1/Fig. 6).
- Set the service switch on M13/D3/S2 to position 1 (Service off).
- Switch the system off.

Emptying the cooling circuit with new pump (IWAKI)

- Both water connections (1/ Fig. 7) on the pump must be turned to empty the cooling circuit. (The two black labelled hoses must not be connected).

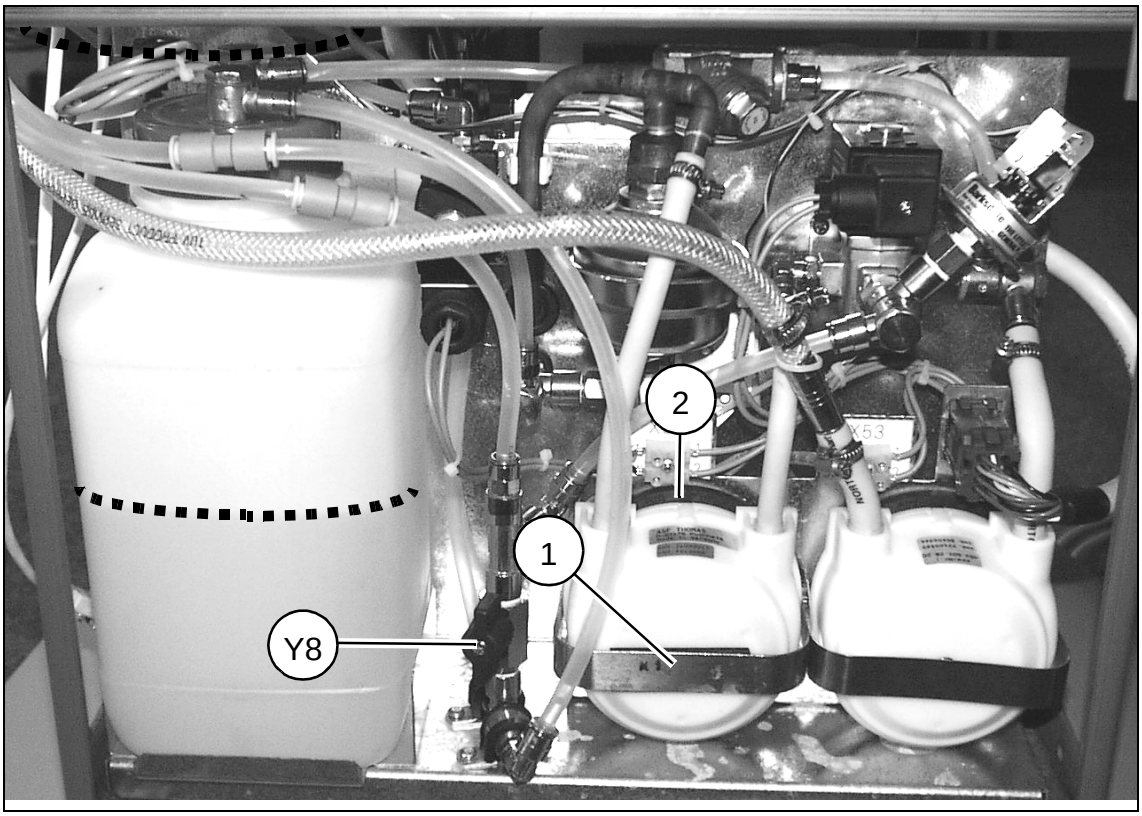

Fig. 8

Water system (rectangular water tank)

Emptying the cooling circuit.

NOTICE	**When opening the water system, avoid direct contact with the water since it may be contaminated.** **Any contact areas should be thoroughly rinsed with clean, running water.**

- Switch the system off.
- Open the system covers.
- Drain the water storage tank.
- Set the sound wave head in the horizontal position (Fig. 5).
- Open two-way/three-way valve Y8 (i.e. move lever Y8 from horizontal =closed to vertical=open.
- Set the service switch on M13/D3/S2 to position 2 (Service on).
- Press the "Menu“ key in the "MAIN MENU“ on the control console once (the next menu "STANDARD“ is displayed).

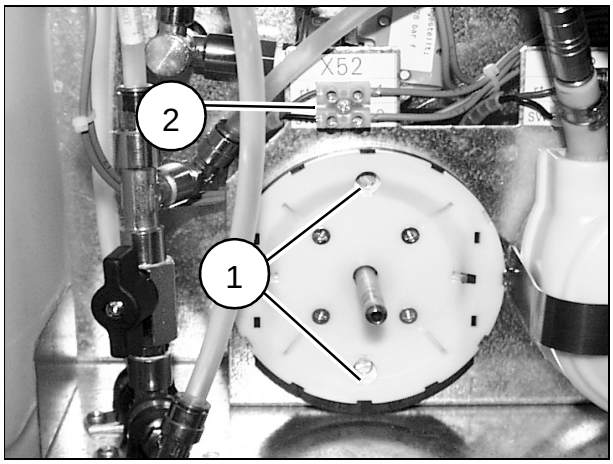

Fig. 9

- Press the "Next“ key in the "EXTRAS“ menu once (the next menu "SERVICEINFO“ is displayed).
- Press the "Next“ key (the next menu "TOOLS“ is displayed).
- Set the "Refill cooling unit“ to "ON".

NOTICE

You can now control the M1 cooling pump by pressing the ⊞ key on the control panel

- Activate the ⊞ key on the control panel until the water is completely drained.

NOTICE

As long as the ⊞ key is activated, hose pump M1 will be running and the cooling circuit will be emptied.

- Set the service switch on M13/D3/S2 to position 1 (Service off).
- Switch the system off.

Removing the hose pump head and motor

- Remove the safety rail (1/Fig. 8) on the hose pump head.
- Press the black lock on the hose pump (2/Fig. 8) up or down and separate the hose pump head from the drive.
- Open the two hose clamps and pull off the hoses.
- Remove the hose pump head.
- Remove the motor by loosening both screws (1/Fig. 9).
- Switch off the power supply (2/Fig. 9) for the motor.
- Remove the motor.

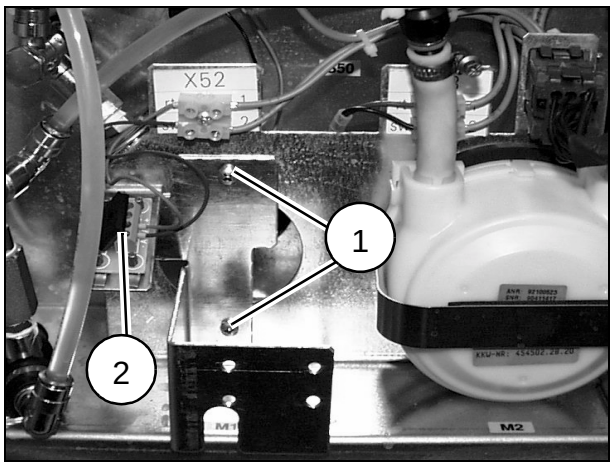

Fig. 10

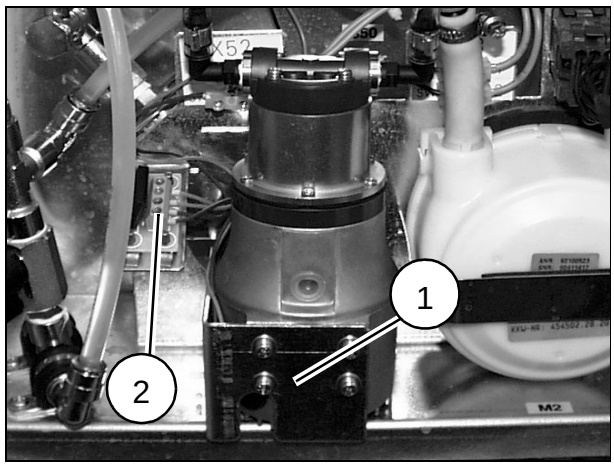

Fig. 11

Installation of new pump (IWAKI)

- Attach the positioning bracket with the two long screws (1/Fig. 10).
- Attach the two cables from the rectifier (2/Fig. 10) to connection X52.
  - "+" rectifier to "rt or 1" connection X52.
  - "-" rectifier to "sw or 2" connection X52.
- Use four screws (1/Fig. 11) to attach the new pump.
- Attach the cables from the pump to the rectifier (2/Fig. 4).
  - "red cable" motor to "+" rectifier.
  - "black cable" motor to "-" rectifier.
- Attach the two new hoses:
  - connect the black labelled hose to the connection (4/Fig. 14).
  - attach the hose with the black adapter (tube) to the valve (3/Fig. 14).
- Connect the quick couplings from the pump to the hoses. The right side of the pump (labelled black) must be connected to the black labelled hose.

Replacing software

- Pull out the charge/energy component.
- Remove the cover from board D3.
- Replace PROM J7 and J10 on board D332 with the PROMS (VB01B) delivered with the kit.
- Reattach the cover to board D3.
- Reposition the charge/energy component.
- Switch the SONOCUR on. Error message "87" appears.
- Turn the SONOCUR system off and then on again. No error message should occur.
- Check in the "SYSTEM DATA" menu to ensure that software VB01B is installed.

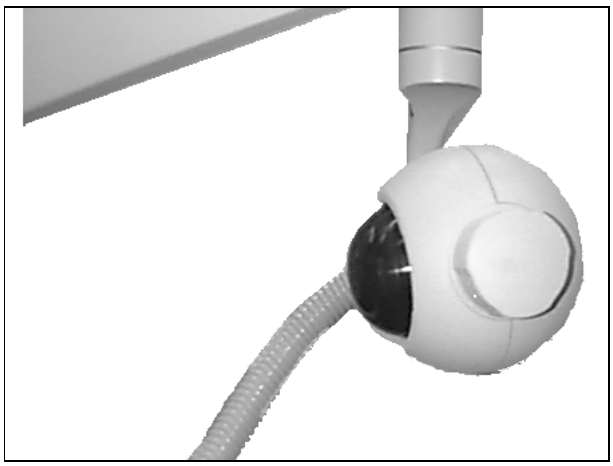

Fig. 12

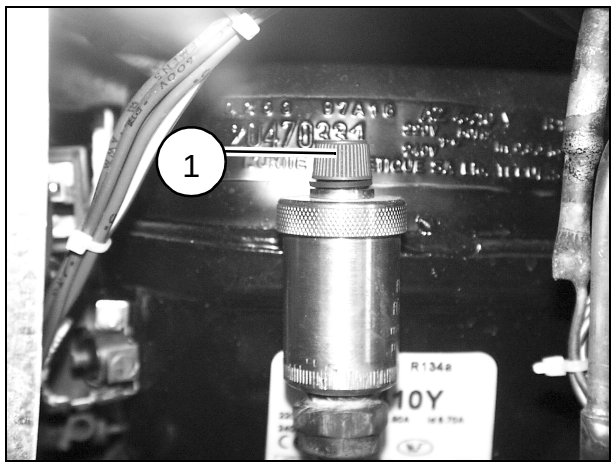

Fig. 13

Filling the cooling circuit

- Fill the water storage tank halfway with water.
- Switch the system on.
- Move the sound wave head into the horizontal position (Fig. 12).
- Open the vent valve (cap) on the cooling unit by two rotations.
- Open the two-way/three-way valve Y8 (4/Fig. 1).
  (Y8 horizontal = closed / Y8 vertical = open).
- Set the service switch on M13/D3/S2 to position 2 (Service on).
- Press the "Menu" key in the “MAIN MENU” on the control console (the next menu “STANDARD” is displayed).
- Press the “Next” key in the "STANDARD” menu once (the next menu “EXTRAS” is displayed).
- Press the “Next” key in the “EXTRAS” menu once (the next menu “SERVICEINFO” is displayed).
- Press the “Next” key (the next menu “TOOLS” is displayed).
- Set “Refill cooling unit” to "ON".

NOTICE

You can now control the cooling pump by pressing the [+] / [−] keys on the control panel.

- Activate the [+] key on the control panel until the water running from the return hose into the water storage tank is free of air bubbles
  - the cooling circuit is filled and the air bubbles are removed.
  - the cooling circuit must continue to be filled until all air bubbles are removed.
  - to expedite the process of removing air bubbles, stop the cooling pump briefly and restart it.

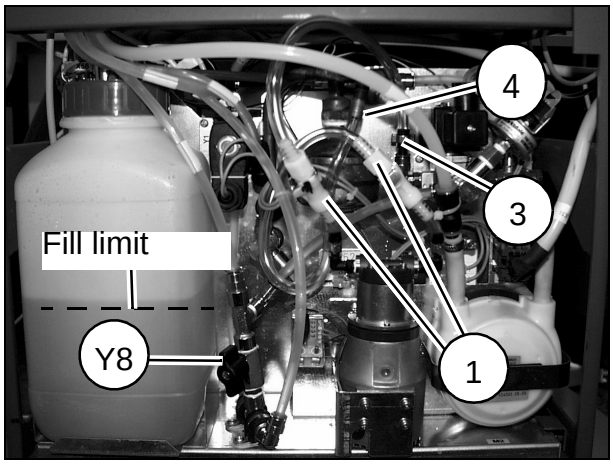

Fig. 14

- Close the two-way/three-way valve Y8 (i.e. switch lever Y8 horizontal = closed, vertical = open.
- Set the service switch on M13/D3/S2 to position 1 (Service off).

NOTICE **The pressure inside the cooling circuit automatically accumulates.**

- Switch the system off.

Emptying the cooling circuit with new pump (IWAKI)

- Turn the two water switches (1/Fig. 14) on the pump to empty the cooling circuit. (The two black labelled hoses must not be connected).

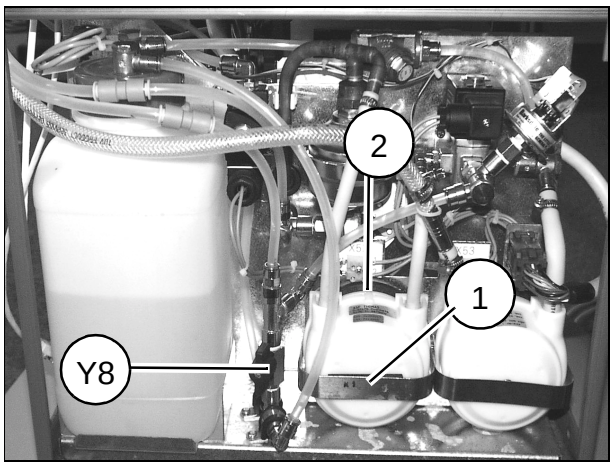

Fig. 1

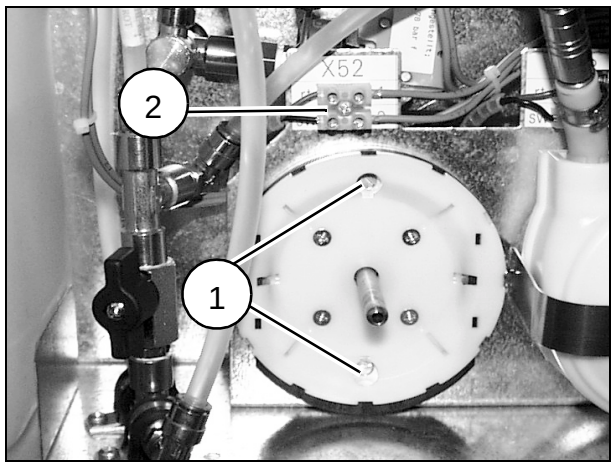

Fig. 2

Emptying the cooling circuit

- Remove system covers.
- Remove the water storage tank and pour out the water.
- Place the return hose in the water storage tank.
- Position the suspension arm horizontally.
- Open valve Y8 (Fig. 1),
  i.e. move lever Y8 from horizontal = closed to vertical = open.
- Switch the system on.
- Set service switch S2 on board D3 to position 2 (Service on).
- On the console, select "Service" followed by "cooling unit".
- Activate the appropriate "empty" key until the water stops flowing.
- Set service switch S2 on board D3 to position 1 (Service off).
- Switch the system off.

Removing the hose pump head and motor

- Remove the safety bracket (1/Fig. 1) on the hose pump head.
- Press the black lock on the hose pump (2/Fig. 1) up or down and disconnect the hose pump head from the drive.
- Open the two hose clamps and pull off the hoses.
- Remove the hose pump head.
- Remove the motor by loosening both screws (1/Fig. 2).
- Switch off the voltage supply (2/Fig. 2) for the motor.
- Remove the motor.

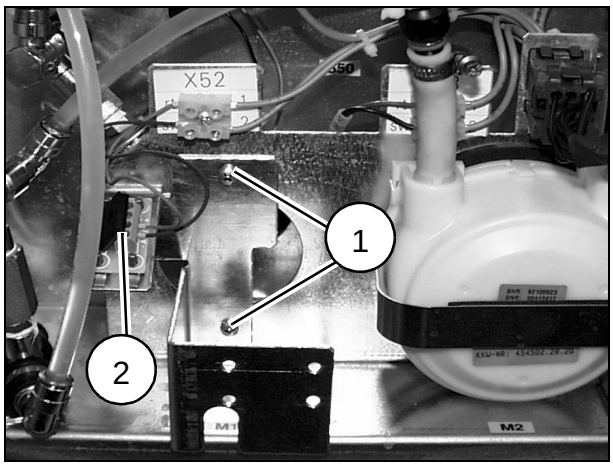

Fig. 3

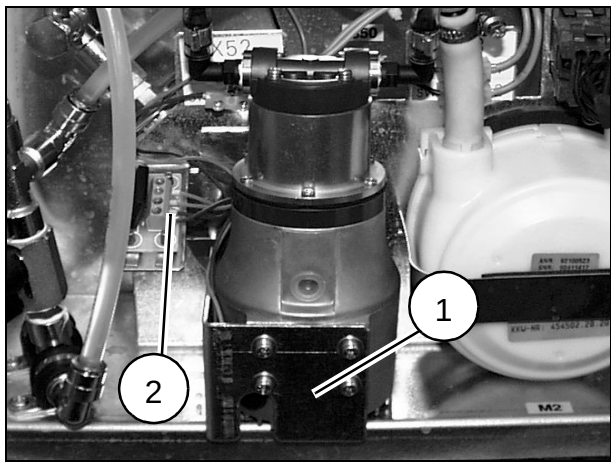

Fig. 4

Installation of new pump

- Attach the positioning bracket with the two long screws (1/Fig. 3).
- Attach the two cables from the rectifier (2/Fig. 3) to connection X52.
  - "+" rectifier to"rt or 1" connection X52
  - "-" rectifier to "sw or 2" connection X52
- Use four screws (1/Fig. 4) to attach the pump into place.
- Attach the cables from the pump to the rectifier (2/Fig. 4).
  - "redcable" motor to "+" rectifier.
  - "black cable" motor to "-" rectifier.
- Attach the two new hoses :
  - connect the black labelled hose to the connection (4/Fig. 6).
  - attach the hose with the black adapter (tube) to the valve (3/Fig. 6).
- Connect the quick couplings from the pump to the hoses. The right side of the pump (labelled black) must be connected to the black labelled hose.

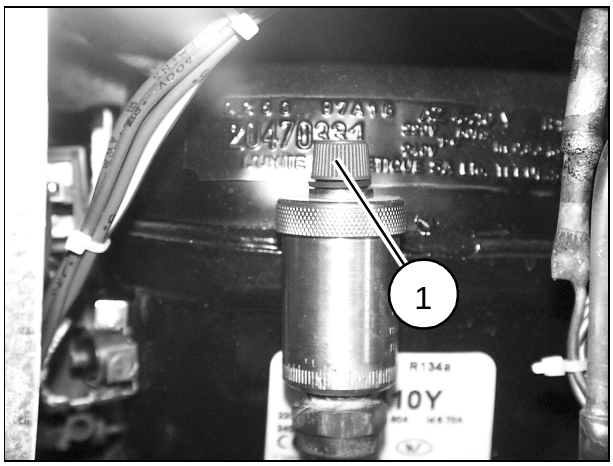

Fig. 5

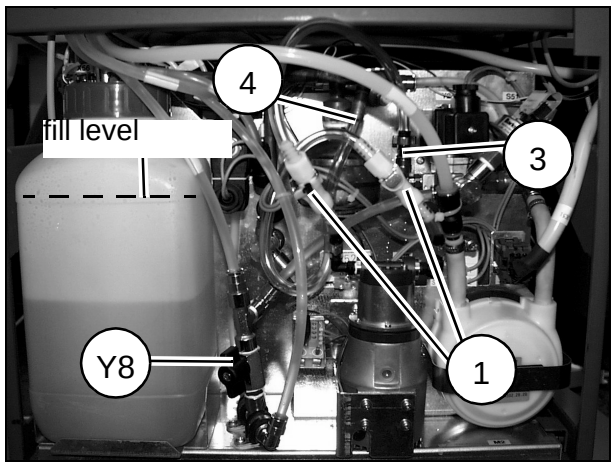

Fig. 6

Filling the cooling circuit

- Fill up the water storage tank with distilled water.
- Switch the system on.
- Position the suspension arm horizontally.
- Open the vent valve (cap (1/Fig. 5) on the cooling unit with two rotations (it remains open).
- Set the service switch S2 on the board D3 to position 2 (Service on).
- Open the valveY8 (Fig. 6),
  i.e. move lever Y8 from horizontal = closed to vertical = open.
- On the console, select "Service" followed by "cooling unit".
- Activate the appropriate "fill" key on the console:
  - the cooling circuit is filled and the air bubbles are removed.
  - the cooling circuit must continue to be filled until all air bubbles are removed.
  - to expedite the process of removing air bubbles, stop the cooling pump briefly and restart it (when cooling pump M1 is running, V188 lights up on board D3).
- Close valve Y8 (Fig. 6);
  i.e. switch lever Y8 from vertical = open to horizontal = closed.
- Set service switch S2 on the board D3 in position 1 (Service off).
- Switch system off.
- Reattach the system covers.

Emptying cooling circuit with new pump (IWAKI)

- Both water switches (1/Fig. 6) on the pump must be turned. (The two black labelled hoses must not be connected).

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Chapter 1:	Text added
Chapter 2:	Text "Item number 47 78 002" replaced by "rectangular water tank". Text "Item number 47 73 052" replaced by "round water tank".
	Pages 6 to 10 added
Chapter 4:	New

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